SCHOOLS IN RURAL ALASKA WITH HIGHER RATES OF STUDENT ACHIEVEMENT: A SEARCH FOR POSITIVE DEVIANCE IN EDUCATION.

By

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Abstract

This study sought to identify schools in rural Alaska with higher rates of student achievement and study what factors contribute to that success. Alaska Native students make up a large majority of the students attending school in small remote villages across the state. Data, however, have shown that Alaska Native students constantly perform lower than any other demographic group on every subject level and lower at every grade level when tested using state assessments. This study begins with a journey to understand the complexity of the problems that affect schooling in rural Alaska, ranging from teacher turnover to school district size and oversight. However, it is important to examine this current challenge by examining the history of education and how that history has affected Alaska Native people today. To identify schools in rural Alaska with higher rates of student achievement, a binary variable was used to determine positive deviance. Data analysis drew on academic achievement of each school as measured by the 5-year average score of the school in three subjects: Reading, Mathematics and Writing. While the results did not yield a case study for positive deviance, the findings and conclusion, using a critical race theory lens question whether schools today, intentionally or unintentionally, are still modeled after the same framework and operate in the same fashion as they did when they were intended to assimilate Alaska Natives to become better citizens. Using an advocacy worldview, this study draws upon the unchallenged truth that schools in rural Alaska may never perform as a collective as well as or better than their urban counterparts under this model.

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Chapter 1 Introduction

In Alaska there are two well-known facts about education: teacher turnover is higher in rural schools (A. Hill & Hirshberg, 2005) and Alaska Native students in aggregate perform lower than any other demographic group on standardized student achievement tests (Alaska, 2009a, 2009b). Energy and intellectual focus on solutions do not address the root causes of the problems that contribute to a school's inability to create an effective learning environment. The template linear approach to school improvement, while valiant, is not always sustainable because it fails to embrace critical theory, which examines both society and culture in the context of organizational behavior. This is especially apparent in rural Alaska where many Alaska Native children fail to meet proficiency standards on state assessments. Based on this standard, schools are not always successful in ensuring every child in Alaska receives a quality education. This trend of labeling schools as failing, or even suggesting certain schools are incapable of meeting Western academic standards of success, contributes to stereotypes that stigmatize people in rural Alaska. This study will explore whether it is fair for one cultural group to set academic standards for another cultural group.

In Alaska, factors that contribute to higher rates of teacher turnover can include the cost of living, limited housing, low compensation, challenging teaching assignments, and isolation. Some factors are controllable, while others are not. At the same time, Alaskan student achievement results suggest that teachers with less teaching experience more frequently teach students from lower socioeconomic groups. Teacher turnover and poor student achievement are directly correlated, according to the Institute of Social and Economic Research. A 2014 report showed students from school districts with the highest rates of teacher turnover (37.9%) "scored

an average of 46.9% of students scoring proficient in Reading" (Hirshberg, A. Hill, & Kasemodel, 2013, p.1). Students from school districts with the five lowest teacher turnover rates (8.7%) score an average of 85.5% on the same state reading assessment. It is common knowledge that turnover rates are higher in rural schools that serve predominantly Alaska Native students; thus, students in rural areas are taught more frequently by first-year teachers throughout their schooling (Adams, 2010).

There are also external factors influencing the success of Alaska schools that are more complex in nature. The history of schooling of Indigenous people, the relationship between the school and the community, infrastructure, or conflicting cultural values can create dissonance and chaos for school leaders, teachers, and students. All of these factors have potential to directly, or indirectly, interfere with the process of education and learning in rural Alaska. Retention can be an indicator of how well new teachers or principals have learned to navigate their sense of place as residents in these small communities. Historically, education has been a primary agency to oppress Alaska Native people, which, in turn, creates lasting negative feelings towards the entire system and those who occupy it (Kawagley, 1995). Unsuspecting newcomers, with little exposure to Alaska Native culture, may find themselves ill-equipped to appreciate the perspectives their students bring to school. Many Alaska Native leaders, school board members, and parents want their children to receive a quality education; equally important in rural Alaska is the need for children to spend time learning traditional cultural values necessary for survival and preservation of their culture and heritage (Kawagley, 1995).

Theoretical Framework

Theorists such as Habermas (2005), Freire (2000), and Wheatley (1999) argue that for systemic and authentic change to occur, it must come from within a group. Advocating for action through a participatory worldview, such change is possible only through engagement, enlightenment, empowerment, and emancipation. The conceptual framework of this study combines sociology, philosophy, and discourse theory as a means to understand phenomenological events and behaviors in a society that generates systems motivated by self-determination. It is imperative to deconstruct how power structures influence our society. For example, in the context of rural Alaska, ideologies are not always aligned with Western values that typically look to monolithic standards to define and measure success for all students. In contrast, a holistic approach to measuring success may include allowing cultural groups to define and measure their own success based on their values. These theories bring to light that the problem with the Western education system is that from its inception, it is designed to enforce the values of the dominant culture. Even today, the Western system of education and governance creates dependency on systems. Examples of this dependency include teacher certification standards which dictate who can teach what, school funding models which provide food through programs like Title I, or governance structures which mandate testing, and tracking student behaviors. When one culture is dependent on another for its education, that dominant culture defines the values for the other culture. When those values are in conflict, there is discord. Under the current education system, cultural values are also intentionally magnified by the dominant culture and education is the means to enforce that rhetoric, which, in turn, drives behaviors and beliefs. These systems can suffocate efforts toward self-determination, and create despair as well as dependency. The more one culture is dependent on another for survival and

basic goods, the more difficult it is to generate self-determination; and dependency can breed resentment towards the dominant culture (R. Barnhardt & Kawagley, 2010; Kawagley, 1995). The solution to this failure of education to meet the needs of Indigenous people of Alaska, can also serve as the tool by which transformation is possible. Education does not need to serve as an agency for oppression, and in fact, education that examines and values the experiences of oppressed people can, in turn, be the agent that fosters cultural revitalization. Freire (2000), an educator and philosopher who was a leading advocate of critical pedagogy, states, "Education either functions as an instrument which is used to facilitate integration of the younger generation into the logic of the present system and bring about conformity or it becomes the practice of freedom, the means by which men and women deal critically and creatively with reality and discover how to participate in the transformation of their world" (p. 34).

Conceptual Framework

There is also limited research that seeks to understand systematic school reform using positive supposition to study organizational behaviors in the schools or the community in which they serve. The 90/90/90 Schools (Reeves, 2005) study inspires the theory that perhaps there are schools in rural Alaska that are performing above average, and that once these schools are identified, their positive attributes, behaviors, structures, and policies can be replicated in other schools. Reeves (2005) examines those schools where 90% of the students are achieving academic success above the state standard, and 90% of the students are designated as living in poverty, and are minority.

The term positive deviance (Spreitzer & Sonenshein, 2004) seems most appropriate to classify successful schools in rural Alaska that have higher student achievement rates. Positive

deviance is a term that was introduced to the field of education by Sparks (2005) through a publication sponsored by the National Staff Development Network. A more expansive definition of the term and its application to this study is covered in Chapter Two of this dissertation. The literature review will expand on the use of positive deviance as both a theory and conceptual framework in organizational and community behaviors. Spreitzer and Sonenshein (2004) further describe the behavior as observable when it "captures the kinds of positive behaviors that organizational members partake in that depart from norms" (p. 829).

Purpose Statement

This study presupposes that a small number of rural Alaska schools may experience higher rates of success as measured by higher rates of student achievement in vulnerable populations, namely Alaska Native students residing in rural Alaska. If these schools exist, this study will determine if their success is replicable when the same or similar conditions are present. Thus, the purpose of this study will first focus on identifying positive deviance schools that exist by determining a cut score based on student achievement data using as many Alaska schools as possible. Second, the study will examine which variables might contribute most to their success based on a list of factors. Examples may include school size, type, geographic location, and other designations that might contribute to positive deviance schools. This study will use quantitative inquiry methods and draw on qualitative data to analyze these positive deviance schools. The study will also work from an exploratory lens to examine the possibility of replication of positive deviance schools across Alaska by using a case study method to examine what is different about such schools. Again, if certain behaviors, factors, elements, and ideologies are present, the subsequent question will then focus on replicability under the same or

similar conditions. These could include staffing, housing conditions, leadership, school district size, number of schools, and geographical vastness. If other schools with similar disadvantaged characteristics can adopt the factors in positive deviance schools, perhaps school success can be replicable in other areas. While this study does not have the means to test replication, it does seek to conclude what combination of behaviors, factors, elements, and ideologies are necessary to create success in rural schools in Alaska. For example, if the findings suggest single site schools perform better than schools in a large school district that span over large geographic areas, it is plausible the constant presence of school board members in the community may be a contributing factor to a school's success. Likewise, the presence of a superintendent on site may influence the direction of the principal and teachers in various ways, which may lead to higher rates of student achievement. Findings such as this will have implications on state policy initiatives that have in the past sought to consolidate school districts to save money.

Definitions

Positive Deviance: The term will identify and recognize Alaska Native rural schools that demonstrate positive characteristics that translate into traditional Western measures of success. In terms of school-wide success, these measures can include higher rates of student achievement, teacher retention, students attending post-secondary education, and students attending school regularly, while maintaining lower than average disciplinary incidents. For the purposes of this study, the dependent variable chosen to identify the positive deviance standard will be the Standards Based Assessment (SBA) scores over the span of 5 years.

The use of the term positive deviance to define schools that experience both higher rates of teacher retention and student achievement was intentional for a variety of reasons. One

prevalent reason is that the term can encompass many meanings. Positive deviance is a concept that can serve as a theoretical approach to behavioral and social change in a community or organization. These changes occur in organizations where similar disadvantages and similarly disproportionally negative results exist. They are anomalies. Thus, true positive deviance schools conjure up different results without the introduction of any prescribed intervention or special advantage. The foundation of positive deviance, which represents opportunities for social change, asserts change must be generated from within a social network, and that no special advantages account for such positive outcomes (Spreitzer & Sonenshein, 2004). The literature review expands on the history of positive deviance and its introduction to the field of education as well as its application.

Rural Alaska: The term rural Alaska describes village schools in bush Alaska. Terms such as *village* and *bush* reflect conversational language that describes small communities in Alaska. However, for the purposes of this study, the term *rural* identifies communities with the following characteristics: a school in a remote area, located off the Alaska road system or marine highway system, accessible only by air, serving predominantly Alaska Native students estimated at 80% or greater, and located in regions of Alaska north and northwest of the road system. A scoring system ranging from 0 to 4 will help determine the degree a community in Alaska is *rural* by factoring in access to goods and services.

Hiring Trends in Alaska's Schools

In Alaska, 70% of teachers work in one of the five largest school districts, yet these five school districts only make up 54% of the newly hired teachers each year (M. Hill, A. Hill, Hirshberg, & White, 2010). That means students attending school in rural Alaska often

experience an influx of new teachers. These teachers commonly come from the Lower 48 and in many cases, are not fully aware of what rural Alaska means in terms of weather, isolation, housing, and culture. Additionally, many lack experience working with Indigenous populations, while lacking professional experience overall. Programs like the Alaska Statewide Mentor project are, by design, expected to provide support to these new teachers with the intent of producing results as measured by teacher retention and increased student achievement. For the most part the Alaska Statewide Mentor Project did see gains, which were reported in their Alaska Statewide Mentor Project Research Summary (Adams, 2010). However, while the results show gains in academic growth by students whose teachers participated in the project, and boast slight increases in teacher retention statewide, these gains are not substantial enough to affect an entire school.

A recent study suggests that rural schools account for 46% of the new teachers hired in 2009 (M. Hill, A. Hill, Hirshberg, & White, 2010). More than likely, the majority of those teacher hires go to rural schools located off the road system that serve predominantly Alaska Native communities. For many educators, rural Alaska is a place they have never seen or experienced firsthand. These hiring trends attest to the challenges rural Alaska schools face in recruitment and retention of qualified teachers. The need to recruit teachers is a costly venture and this trend forces rural schools to spend more time, resources, and energy on hiring rather than retaining teachers.

Alaska does not have the human capital to generate enough teachers under the current teacher preparation system to close the gap between supply and demand. Alaska continues to import its teaching staff to fill the workforce demand. Unprepared for the working conditions they face in rural Alaska, teachers leave, and school districts have in the past replaced as much as

thirty percent or more of their workforce with teachers prepared outside of the State of Alaska. Chapter Two provides a detailed report on the workforce demographics, including turnover rates by region, percentage of Alaska Native teachers and administrators, as well as age and retirement eligibility.

The Achievement Gap

Equally disconcerting is the achievement rate of Alaska Native students. For years, Alaska Native students have the lowest scores of any other demographic group on standardized student achievement tests. The 2013-14 Report to the Public, published by the Alaska Department of Education and Early Development, confirms half of the statewide enrollment is White; and Alaska Native or American Indian is the second largest group at 25%. The largest gap in achievement exists between these two groups and of the 27 administered assessments, White students outperformed Alaska Native students by wide margins on every assessment at every grade level (Alaska, 2014). To combat this achievement gap for Alaska Native students, many policymakers and educational leaders have capitalized on federal and state resources to explore initiatives and programs to address this issue. This results in an enormous amount of energy, intellect, and money focused on solutions that do not always align with the causes contributing to a school's inability to create an effective learning environment. Take the following hypothesis: research suggests that if teacher retention and quality does equate to higher student achievement gains, then the goal of teacher retention should be an attainable one (Darling-Hammond, 2000). If, in rural Alaska, hypothetically speaking, teacher housing is the main cause for turnover, teacher housing is a controllable variable. That is a manageable problem; building more suitable housing, creating opportunities for non-Native teachers to

purchase housing and land, if that is their desire, are examples of feasible solutions. Housing is controllable, unlike the weather in Alaska, which is not controllable, and which could be a primary factor that contributes to turnover, along with, the isolation and access to goods and services. If the cause of higher teacher turnover is due to uncontrollable variables, then a logical alternative solution is to increase the number of teachers who are Alaska Natives and want to be, or already are, in those environments. Why then do we not see more energy and intellect spent on developing a teacher preparation program that is a residency-based model with the goal of increasing the number of Alaska Native teachers, if this seems like a more viable and cost saving solution to the problem of high teacher turnover rates in rural Alaska? What is important to understand about the positive deviance framework is that for behavior and cultural changes to occur, both the understanding of the problem and the solution must come from within the community. This model also infers that power must rest with those individuals and communities that understand, through their own experience, the nature of the problem.

While this study was not able to conduct an experimental design, it does suggest that in the positive deviance framework, local members of the community would serve as ambassadors to change behavior in areas with similar or like conditions. In some cases, communities may need to address issues like locus of control, school board representation, becoming a borough, or even sending their children down river to attend another school. This model also works to change behaviors at the local level. School attendance and truancy policies continue to surface in discussions with educational leaders, and many leaders believe that to ensure students succeed they must be in school, making school attendance an important variable when considering school-wide success. This study will examine if a correlation exists between school attendance and higher gains. In practice, however, the positive deviance framework would first identify

why children were not attending school. Do their parents distrust the school system? Do the children have other responsibilities in the home related to subsistence living? Or does the child even want to go to school? Once there is understanding of a community-wide issue, there also must be collective opportunities to alter the system and offer up alternatives that may be better for that group of people. Under this model of positive deviance, one could suggest having a truancy policy, while another solution might be to start school at 10:00 a.m. during the winter months instead of 8:00 a.m. The complexity of this challenge will require a different approach; one cannot use the same level of thinking to solve the same problems.

Chapter 2 Literature Review

The Construct of Positive Deviance

The concept of positive deviance for this study was identified as the most appropriate terminology to recognize Alaska schools that are performing above the standard, and that demonstrate positive characteristics that translate into traditional Western measures of success. These schools, if they exist, would make them anomalies or outliers in the system. A variety of measures, such as higher rates of student achievement, teacher and principal retention, students attending post-secondary education, students attending school regularly and lower disciplinary incidents, could all be indicators that contribute to the success of a school. Success can also be measured by examining the relationship a community has with its local school, how community members view the school as either a positive or negative environment, how many parents actively participate in school activities, or attend school meetings, and so on.

The use of the term positive deviance was intentional for a variety of reasons; one being it represents opportunities for social change generated from within a social network with no special advantages accounting for such positive outcomes. Another reason is positive deviance is a concept as much as it is a theoretical approach to behavioral and social change in a community or organization. It also takes into account the possibility of replication where similar disadvantages and similarly disproportionally negative results occur. Positive deviance schools, however, conjure up different results without the introduction of any prescribed intervention or special advantage (Sparks, 2005).

In a review of the literature on positive deviance, several resources cite the importance of solutions coming from within the social environment. Equally important is the absence of

imposing ideas, information, remedies and solutions from outside. The *Basic Guide to the Positive Deviance (PD) Approach* (2009) outlines the guiding principles, methodologies, and the process that creates an environment that allows social change to manifest itself from within a community (The Positive Deviance Initiative: Basic Field Guide to the Positive Deviance (PD) Approach, 2009).

Jerry Sternins is quoted in *Leading for Results* (Sparks, 2005) and is viewed as the "father" of positive deviance; his work goes back to the early 1970s with a focus on health and safety in Third World countries. The basic premise behind the concept is that in every community, social network, or organization there are people who do things differently and better than the norm, yet they cope with the same resources and constraints as everyone else in that context. The idea behind positive deviance is to look at the strategies of the few who are succeeding and to bring their *deviant* behaviors into the mainstream; this amplification can create change in others by simply allowing the community to identify them as different.

For this study, what makes positive deviance so appealing is the focus on the *positive* outcomes resulting from within a community, coupled with the defiance, or demonstration of being different from the norm. Jerry Sternin, Co-Founder of positive deviance Initiative states, "The traditional model for social and organization change doesn't work. It never has. You can't bring permanent solutions in from outside" (Sternin, 2016). Sternin (2016) further expands on how using outside influences will not make changes in schools work; he suggests the alignment between commercial publishers, staff development consultant, and trainers with school district and state officials "has repeatedly admonished the ability of local educators to think critically and responsibly" (Sternin, 2016, p. 185). The marketing of answers for schools has kept schools habitually dependent on external authorities. Members of the local school community have

come to accept that to change a school, external solutions are the answers. Yet, Wheatley (1999) argues solutions need to come from within a school system. This study will argue, however, that for such change to be sustainable in the context of rural Alaska, it must also engage the community in that process.

As Alaska's leaders at the highest level seek solutions to improve schools, they may fail to recognize best practices already employed within a school. Sparks (2005) notes, "...Within virtually every school there are individuals whose behavior enables them to achieve better-than-average results and that those individuals have discovered pathways to success for the rest of the group" (p. 111). The results from the implementation of positive deviance suggest high rates of sustained success, yet the literature is still limited, perhaps because the application of this theory began in the seventies, although the work is expanding. In examining the application of positive deviance in a school setting, it is critically important for the community members to find the positive deviance within their own community (p. 111). Sparks explains, "Positive deviance inquiries into what's working and how it can be built upon to solve very difficult problems. It requires that experts relinquish their power and believe that solutions already reside within the system [or community]" (pp. 111-112).

Studies that draw on the positive deviance construct are more prevalent in the health field. However, what positive deviance does not account for is who defines success? In dealing with issues of health care practices, malnutrition, or death and human mutilation in Third World countries, all areas that have documented success with positive deviance, the negative human behavior is obvious, and finding solutions to minimize its occurrence seems simplistic. It is not, however, so obvious when dealing with education where answers, solutions, standards and expectations are defined not by local members, but by systems developed by the dominate

culture. This is where positive deviance, for this study, lacks direction. Western education systems do not support Alaska Native people; in fact, the complex and dark history must be explored to better understand why Alaska Native people may not value the traditional education Westerners seem to offer.

History of Education in Alaska

For the historical narrative, past tense is most appropriate to describe the events that occurred. It is thought the original educational system for each aboriginal community in Alaska may have differed in terms of language, dance, and social structure out of geographical necessity, yet Indigenous scholars and Elders believe certain basic principles were common among the different tribes in the Northwest Territories. With mostly oratory references to draw on, stories passed down from generation to generation construct a pre-colonial educational system that served to sustain culture. During this time, evidence suggests various members of the local community were responsible for the education of the youth, and in most cases, uncles and aunts served as the teachers and mentors for young men and women to learn traditional and technical skills for survival. Immediate family members, usually Elders, would have focused their lessons on cultural preservation, through dance, language, and stories to demonstrate their values and beliefs to the next generation. In present day Alaska, Elders play a similar role as they did in pre-colonial time. The Guidelines for Respecting Cultural Knowledge developed by the Alaska Native Knowledge Network (2000) states, "Elders are accorded a central role as the primary source of cultural knowledge. It should be understood that the identification of 'Elders' as culture-bearers is not simply a matter of chronological age, but a function of the respect accorded to individuals in each community who exemplify the values and lifeways of the local

culture and who possess the wisdom and willingness to pass their knowledge on to future generations. Respected Elders serve as the philosophers, professors and visionaries of a cultural community" (p. 2).

Likewise, in a precolonial educational system, Elders would have been responsible for sharing cultural knowledge with younger generations. Barnhardt explains, "In all cases the process [of education] was internal; that is, the authority and responsibility for educating the young belonged to members of the village in which the person lived" (R. Barnhardt & Kawagley, 2010, p. 63). This pedagogy would all change with the coming of Russian fur-traders, and again with the illegal sale of Alaska to United States of America.

Russian expeditions to Alaska were funded by a variety of independent companies and wealthy men who outfitted sailing ships with a captain, seamen, and provisions in a quest for seal fur. Seaman received shares for their work with the captain taking the largest cut. The expeditions were instructed to document every aspect of their trip, including taking specimens, sketching drawings, and journaling about their observations of the region and people (Shelikhov, 1981; Smith, 2003). Alaskan Natives were often referred to as *savages* in writings and it was common to kill them over petty scuffs that occurred between crewman and Alaska Natives. As the number of Russian ships increased to the region, so too did the instances of violence that transpired regularly between Russian fur-traders and local islanders. Documentation of the violence in the early 1700s, as Russian fur traders explored the coastal regions of Alaska, namely the Aleutians and Kodiak, were often portrayed as justified in reports. It was not until the arrival of Grigoriĭ Ivanovich Shelikhov, and his interest in fur-trading that Russians would permanently settle in the region. Shelikhov is known for organizing the Russian-American Company; this monopoly eliminated many of the smaller merchant ships, and created a strong hold on the

region. Once Shelikhov was able to establish a permanent Russian settlement at Three Saints Bay on the southwest coast of Kodiak Island, he erected a school for the youth. It is noted that he was able to establish this strong hold by killing and taking Alaska Natives hostage to enforce obedience (Pierce, 1986).

To understand the effects of this era on Indigenous people, one has to imagine what absolute freedom must have felt like, to be free from an economy, rules, and oppression, and then have it taken way through systematic forms of tyranny and violence. History tells the story of documented violence being used to dominate Indigenous groups, and this was true as well for Alaskans. Then, the use of slavery was widespread and used to gain control over the next generation. Finally, education was used to introduce class systems and establish an economic society. Once this process took hold, it eliminated the Alutiiqu people's earlier traditions and rituals needed for self-reliance.

Much of the original literature, unedited, still exists today and has been translated into English for scholars to interpret. Journals from explorers often justify killings as necessary for the safety of future travel and to access resources. These resources and land, however, were never lawfully given to the early explorers. The islanders, as they are referred to in many of the correspondences, were not always hostile. As permanent settlements took hold, these two cultures began to face co-existence. Some documents from this era record accounts of merchants mistreating Native people and even describe them as irresponsible and instigated. Without these accounts to accompany this historical information, one might believe the Russian merchants were simply visiting or on a hunting trip; in some cases, one might view those descriptions as describing animals, and not people of the human race. In truth, the Russians waged war on a people to exploit their resources. In addition to the psychological harm to Indigenous people

caused by being a conquered nation, Russian invaders created an education system designed to promote a class system, making Indigenous people indentured slaves to the Russian-American company.

After the permanent arrival of the Russians, the original educational systems for aboriginal communities deteriorated. Gradually, Alaskan Native children were shifted from learning in their own environment to learning in classrooms, and rather than learning from their own people, they were being taught by people from another culture. Consequently, this modification in the structure of learning for aboriginals would begin the process of cultural deterioration. As Demmert (1986) explains, "The original educational system for each aboriginal community in Alaska may also have differed, but certain basic principles were common to the several groups. Various members of a local community were responsible for the education of the youth. In said cases, this meant the responsibility was met by members of the immediate family. In other cases, a member of the extended family or other members of the community were responsible. In all situations, the process was internal; that is, the authority and responsibility for educating the young belonged to members of the village in which the person lived" (p. 68).

It is documented that the first school in Alaska may have been established in 1784 to coincide with the first permanent settlement on Kodiak Island. This event "marked the beginning of a hundred-year period of Russian domination of Alaska" (Ray, 1959). Three types of Russian schools emerged with varying purposes and intent; in addition, this new education system generated a socio economic class system, which was virtually incomprehensible to the Indigenous people. Indigenous people view the land, air, animals, and water as gifts from the creator and not a commodity for only a few to exploit.

Three types of Russian schools were formed. (1.) Public Schools, under the control of the Russian-American company were designed to train personnel to work for the company. (2.) Religious Schools, under the control of the Russian-Greek Orthodox Church were designed to Christianize the Natives. Thus, education and schooling now created a purpose, not just for fur-traders to invade Alaska, but for priests to infiltrate the region as well to establish missions and churches. In 1796, the first Russian Orthodox priests arrived in Alaska to establish mission schools (R. Barnhardt & Kawagley, 2010). (3.) Government Schools, these schools were available for the sons of company officials. These schools reinforced both in perception and reality dominance of one culture over another through segregation (Demmert, 1986).

By the early 1800s, oppression was achieved over the Alaskan Natives and the Russian Orthodox churches and the Russian-American Company expanded schools in Kodiak, Southeast Alaska, and in the Aleutian area. "Literacy programs flourished, especially in the Aleutians, and many Aleut people became sophisticated readers and writers in both the Russian and the Aleut languages" (C. Barnhardt, 2001). This was rather progressive and Sheldon Jackson, in his 1886 Report on Education in Alaska with maps and illustrations, later would write about the Aleut and Alaskan Natives of the southeast region with esteem and admiration for the existing schools and people. Yet even with the preservation of the local language, it was very clear the schooling of Alaskan Native children under Russian control had three goals: to Christianize, to civilize or westernize, and to make them useful servants of the Russian American Company (R. Barnhardt & Kawagley, 2010).

The era of Russian dominance would continue well after the 1867 purchase of Alaska, even today the Russian Orthodox Church has a strong presence throughout the State. In a review of the literature documenting the Russian fur-trade and subsequent conquest over aboriginal

tribes, it is important to note every writer, whether drafting a report, letter, or log, has a voice through published work. Researchers must take a critical approach when reading original works of literature documenting the events that transpired in the 1700-1800s. In all cases (Jackson, 1886; Pierce, 1986; Shelikhov, 1981; Smith, 2003), the voices are those of the oppressor, not the oppressed who were silenced in death, leaving no documentation of the events shared from their perspective. The term Russian influence versus dominance, for example, is used predominantly in reports documenting the history of education. The use of the word *influence* to describe Russians' incursion of Alaska territories implies Alaska Native people voluntarily accepted this fate. In other cases the term *uncivilized* is commonly used to describe Indigenous people, yet the literature makes no mention of acts of injustice, the rapping and pillaging of villages, or how the introduction of alcohol was used to incapacitate and impair the judgement of Native American people. Further, the concept of absolute freedom is not often discussed in the literature. There simply is no awareness or acknowledgement in the early literature to document how these changes affected aboriginal cultures. In the same way the Doctrine of Discovery was used to justify the illegal seizing of Native American lands in North America, Russians had assumed "ultimate dominion" over the lands of Alaska, and these movements, grounded in religion, gave way for dominate cultures in the name of Christ to remove any sovereignty Indigenous people had prior to being discovered (Hartman, 2015).

The Purchase of Alaska

March 30, 1867 marked the United States of America's purchase of Alaska from Russia. By this time, however, the United States had already justified the way in which political powers laid claim to lands belonging to Native Americans. In 1823, Chief Justice John Marshall

formally recognized the Doctrine of Discovery through the Supreme Court. So while the date of March 30, 1867 marked the unauthorized transfer of title from Russian possession to America (R. Barnhardt & Kawagely, 2010) the United States took no care to consider the current occupants. It would take a decade to rectify this event and relinquish the land rights back to the Indigenous tribes. Until then, however, the purchase triggered yet a new era of missionary education in Alaska, and American churches began to fill the void created by withdrawal of Russian influence after 1867 (C. Barnhardt, 2001). Some twenty schools were up and running all across the regions of Alaska (St. Michael, Golovin, Kangekosook, Koyuk, Kotzebue, Unalakleet, Akiak, Bethel, Kalskag, Uiegaluk, Tuluksak, Gambell, Barrow, Point Hope, Cape Prince of Wales, and St. Joseph's) with the exception of the interior.

In 1867, there was no governmental support for Alaska. A quote from the territorial Governor of Alaska at the time states, "There is literally no civil law, no government, no readdress for injury, no protection for whites or Natives, no legal authority for settlement, and no punishment for crime" (Ray, 1959). With more reports coming in about the chaos in this new land, Congress finally acted, and in 1869, appropriated $100K for education for Indian tribes with the expectation that some or all of the money would be spent on education of Alaska Natives; not a dollar of the money reached Alaska, however (R. Barnhardt & Kawagley, 2010; Demmert, 1986).

Additional reports on opinions about the Alaska Native people in regards to education were sent to the United States authorities. In 1875, John Eaton, US Commissioner of Education received a letter from Dr. William H. Dall, an American scientist and explorer, describing the characteristics of the various native people and stating his opinions of their educability" (R. Barnhardt & Kawagley, 2010). Dr. Dall was relatively negative when describing the Athabaskan

people; he seem to have more admiration for the Eskimo, and Aleuts, and further states, "they are highly regarded as intelligent and even possibly not Native, due to the Russian influence" (p. 19).

In 1884, the Alaska Organic Act called for formal government support for education in Alaska. At the time of passage, 99% of the school-aged children in Alaska were Alaska Natives (Demmert, 1986). "Seventeen years after Alaska became a territory of the United States that the first official federal legislation impacting Alaska, the Organic Act, was passed. This Act established the first civil government in Alaska and provided the legal basis for federal provision of education. The Act delegated responsibility for providing schooling "for children of all races" to the Office of the United States Secretary of the Interior. Four years later, the task of providing education was specifically delegated to the Bureau of Education, a unit within the Department of the Interior" (C. Barnhardt, 2001).

Sheldon Jackson, General Agent of Education in Alaska

In March of 1885, the Secretary of the Interior, H. M. Teller, requested that the United States Commissioner of Education, then John Eaton, develop and implement an education plan for the territory of Alaska. In the following month, on April 11, 1885, he appointed Sheldon Jackson, then superintendent of Presbyterian missions, the General Agent of Education in Alaska (Ray, 1959). Jackson took his new role seriously and had already taken note of the inventory of schools. Jackson's efforts to establish schools and provide them with supplies were met with opposition by Westerners. On August 19, 1885, he was arrested by the deputy marshal and escorted off a steamer departing from Sitka for communities where the schools were located. Soon after news arrived of the arrest, the officials responsible for the "harassment of Jackson"

were relieved of their duties (Demmert, 1986). Also in 1885, it is documented that $25,000 was the first federal appropriation of funding for education in Alaska. The funding was to be used to enlist the support of missionary groups and construct schools. Jackson was an advocate for education and he further persuaded the federal government to not only subsidize mission schools, but to build new schools as well.

In 1886, Jackson submitted his first report to the Secretary of the Interior (Jackson, 1886). In his opening paragraph on education in Alaska, Jackson sets the stage for what has become an ongoing challenge for researchers, policymakers, and education leaders alike. In the context of the Alaska education system, he states, "In no other way can we be impressed with the peculiar needs of the field to which our system must be adapted in order to secure the highest success" (p. 5). In this report, one might see this as progressive in the recognition that "adaptation" is needed to achieve success, yet in the same breath, the term success when deconstructed from conflicting worldviews, one Indigenous, the other Western, remains a root cause for tensions that exists today.

This deviation from the history is necessary to demonstrate success in education from the Western worldview when applied to Alaska Natives. Education was intended to provide an external influence designed to "civilize the next generation of Native people" (C. Barnhardt, 2001; Jackson, 1886; Demmert, 1986). This assimilation under the framework of education in the late 1880s of Indigenous people would eventually cultivate, nearly 100 years later, an era of self-determination that still, to present day, seems unfulfilled in light of how success is defined and measured and how those definitions and measurements affect Alaska Native students.

After a brief overview of the landscape and environment, Jackson's report collects literature on the population (p.10), as part of this section he includes two statements under the

heading, "NOT INDIANS" in which "Hon. A. P. Swineford, Governor of Alaska," in his annual report to the Secretary of the Interior (1885) states, "These people, it should be understood, are not Indians. Their appearance, habits, language, complexion, and even their anatomy, mark them as a race wholly different and distinct from the Indian tribes inhabiting other portions of the United States" (p.10). The testimony further goes on to assert the skillfulness of the Natives, their industrious spirit, and affirmation that, "they will yield readily to civilizing influences, and can, with much less care than has been bestowed upon Native tribes elsewhere, be educated up to the standard of good and intelligent citizenship" (p. 10). An additional comment from Hon. F. A. Walker, Commissioner of Indian Affairs, confers the same conclusion about the Alaska Native people of the Southeast Islands, "I am disposed to avoid entirely the use of the word 'Indian' as applied to them" (p.10). He goes on to suggest the Alaska Natives of southeast must be of Asian or Chinese descent. The report further distinguished Natives as having the same rights as White settlers by stating they can be sued, make contracts, and go and come at pleasure. "Among those best known their highest ambition is to build American homes, possess American furniture, dress in American clothes, adopt the American style of living, and be American citizens" (p. 11). Again, by reading the accounts one might find this approach almost generous for its time, considering just twenty years earlier America had abolished slavery, as evident in the 13th Amendment of 1865. Three years later, Ulysses S. Grant became President and launched a "peace policy" (Reyhner & Eder, 2004). He declared, "The proper treatment of the original occupants of this land--the Indians--is so deserving of careful study. I will favor any course toward them which tends to their civilization and ultimate citizenship" (p. 61).

Jackson, perhaps aligning himself with the philosophies of Grant, speaks to what is working from his perspective, as well as sharing what is not working. He makes reference to the

influence alcohol has on the people of Alaska. "In regards to the People of Saint Lawrence, with a noted population of roughly 800," Jackson writes, "they were the largest and finest formed people of the Innuit [sic] race, but slaves to whisky. In the summer of 1878 they bartered their furs, ivory, and whalebone to the traders for rum, and as long as the rum lasted they spent their summer in idleness and drunkenness instead of preparing for winter. The result was that over 400 of them starved to death the next winter" (p. 13).

In the *Report on Education in Alaska* (Jackson, 1886), the economic conditions of the Aleutians, including Unalaska, Nokolski, Pribliloff (Seal Islands), the village of Saint Paul, and Satin George are noted in the literature. Reference is often made to the Russian influence, the Americanization, and use of modern appliances, as well as agreement with the United States Government and the Alaska Commercial Company, which generated revenue for the people who resided in this region (p. 15), indicating economics made assimilation more malleable: "The revenue of these islands since 1870 has returned to the Government more than half the sum paid to Russia for the whole country" (p.16).

Jackson also speaks of the teachers in his report and asserts that, "only those of the higher grade of certificates have been employed as permanent teachers" (p. 33). Again reaffirming the intent of schooling, he states, "In a few places, where they can have a home, in the larger number of places the teacher should be a married man and accompanied by his wife. Especially is this the case in the native villages, where the school aims to lift the whole community out of their old methods into those of civilization. In such communities a well-ordered household is an objective lesson of great power" (p. 33). Reference to the need to have Native Alaskans abandon their old ways reinforced how education was, and to a considerable degree still can be, used to repress cultural identity.

In the late 1800s, the federal government established day schools in Alaska villages and a limited number of state vocational boarding schools. Instruction was provided in the three "R's," in industrial skills, and in patriotic citizenship. A strict "English-Only" policy governed all language and curriculum decisions. Some schools were operated directly by the federal government while others, referred to as "contract schools," were contracted to missionary groups including Catholic, Congregational, Episcopal, Methodist, Moravian, Presbyterian, and Swedish-Evangelical (C. Barnhardt, 2001). Under the Russian schooling model, bilingual education was embraced and it was common for schools to mix both Russian Creoles and full-blooded Natives.

Native Alaskans had just cycled through one generation of domination by Russians and, from some accounts, seemed to be adapting to their changing world just as another wave of foreigners were planning to invade their homelands. It is evident the second wave of Westerners from North America were less tolerant of the Native culture than the first as proven by treatment of mixed blood Alaskan Natives and policies such as English only, or the banning of Native dance in an education setting. In reading of the teacher institute, it is odd to think that Sheldon Jackson wrote in 1886 for a need to bring teachers together for a 2-week institute. He suggested that working with half-civilized people in these conditions would make anyone "greatly depressed in their work" (p. 33). He suggests that once a year, the opportunity to "cheer one another, compare views, discuss methods, and glean from the experience of those similarly situated with themselves would be invaluable" (p. 33). Ironically, this very concept is still being discussed today as leaders seek to support new teachers.

The photos in the report (Jackson, 1886) depict two families; the caption of one reads, "Eskimo family on the Kuskokwim River, Alaska (Uncivilized)," and below another reads the same but in the parentheses reads "Civilized." The backdrop is nearly identical of four people--

two adults (one male, one female), and two children, (one male and one female)--in front of a cabin, possibly the same cabin, suggesting a staged photo. Yet the only noticeable difference between the two pictures is the clothing; the uncivilized are in fur and traditional regalia, while the others are in Western style clothing.

The report by Sheldon Jackson gives insight into what his goals were for education and schooling in Alaska, defining success as the ability to civilize a people. This dichotomy of Voluntary and Involuntary Minorities, as described by Ogbu (1998), continues to manifest itself in a variety of forms even today.

Alaska Education: Views from Within (R. Barnhardt & Kawagley, 2010) speaks to the role of mission schools in Alaska during a historical era:

> The children must be kept in school until they acquire what is termed a common-school education, also practical knowledge of some useful trade. We believe in reclaiming the Natives from improvident habits and in transforming them into ambitious and self-helpful citizens. Further, schooling coupled with Christianity was a powerful lever to influencing them (Alaskan Natives) to abandon their old customs. The schools were segregated either by intention or circumstances. In Juneau and Sitka, where there were substantial numbers of non-native children, Natives and non-Natives schools operated concurrently. An attempt to consolidate the two schools at Juneau was foiled by local residents. (p. 9).

Other acts also sought to help Alaskan Native people become more *civilized.* Sheldon Jackson is credited with the introduction of reindeers into the arctic region. In 1892, the first reindeer were brought to Alaska. Their purpose was to provide meat and clothing for the Eskimo, as well as perform a civilizing influence. The idea was that reindeer herds would allow Alaska Natives to change their nomadic lifestyle; no longer would they need to leave the region in quest of food.

Ray (1959) predicted, the reindeer would allow Native Alaskans to take the long step from fishermen and hunters to dwellers in villages, and the reindeer would provide Alaskans with permanent employment.

The Klondike Gold Rush of 1898 brought an influx of Western settlers to Alaska, and the growing non-Native population expressed "dissatisfaction with the school system that seems to focus on education for Native children" (R. Barnhardt & Kawagley, 2010). By 1899, that growing dissatisfaction resulted in local communities seeking authorization to set up school boards, select teachers, and establish schools that served White children and children of mixed-blood. Racial problems were first reported in 1902 when the school board in Nome neglected to make provisions for Eskimo children to attend schools. In addition to the gold rush, the development of commercial fishing and timber industries caused the non-Native population to surge. As a result, the federal Bureau of Education was not able to provide adequate schooling for all of the newcomers, and the United States Congress granted authority to individual communities in Alaska to incorporate and establish schools, and maintain them through taxation (Darnell, & Hoëm, 1997). Many small, non-Native towns did this and opened schools immediately. However, several communities that were too small to incorporate still desired some degree of regional autonomy in the management of their schools. Thus, "Congress included in a 1900 Civil Code for Alaska, authorization for incorporated towns to establish and operate schools for White children only" (R. Barnhardt & Kawagley, 2010, p. 9).

In 1905 Congress passed the Nelson Act. "The act directed the District of Alaska to assume responsibility for education of white and colored children of mixed blood who live a civilized life" (R. Barnhardt & Kawagley, 2010, p. 9). "With the passage of the Nelson Act, schools for white children outside of incorporated towns fell under the authority and

responsibility of the Governor of Alaska as an ex-officio Superintendent of Public Instruction. However, the education of Native Alaskans remained the responsibility of the United States Secretary of the Interior" (Demmert, 1986). Thus, a dual system of education in Alaska was inaugurated, with schools for Alaska Native students run by the federal Bureau of Education, and schools for White children and a small number of *civilized* Native children operated by the Territory of Alaska and incorporated towns (C. Barnhardt, 2001).

Less than a year after Congress passed the Nelson Act, six "mixed blood" children in Sitka sought, and were denied, admission to the Sitka public school. They then sued the district, asking the court to order them admitted as *civilized* mixed bloods. The record showed nothing about the children that would create problems for the school, such as poor behavior or ill health. Their families were responsible people who participated in community life. However, the court seemed to attach great weight to the fact that the children lived in the Sitka Indian village and associated with others there. The court developed a test of what constituted the "civilized life":

> Whether or not the persons in question have turned aside from old associations, former habits of life, and easier modes of existence; in other words have exchanged the old barbaric, uncivilized environment for one changed, new, and so different as to indicate an advanced and improved condition of mind, which desires and reaches out for something altogether distinct from and unlike the old life. In rejecting the children's plea, the court considered that civilization includes more than a prosperous business, a trade, a house, white man's clothes and membership in a church, (U.S. Senate, 1913).

With Alaska Native children, being deprived an education, progress was slow and eventually Regional Education Agencies were formed that provided educational opportunities for younger children during the 1970s to attend school in their communities. However, high school-aged

children moved away from their villages to attend boarding schools in New Mexico, Kansas, Oklahoma, or, to state boarding schools and boarding home programs (C. Barnhardt, 2001). Eventually, Alaska Native children would get their schools because of the landmark class-action suit, filed by Alaska Legal Services, on behalf of Molly Hootch. Molly was a young girl who lived in the Yup'ik Eskimo community of Emmonak who signed what she thought at the time was a petition to get a high school in her village. Marshal Lind, the Commissioner of Education at the time, settled the lawsuit.

From historical to present day, Alaskan Native children have been fighting for their education. Under the theoretical framework of Freire, Alaskan Native educators and leaders trained in Western universities are transforming the language and public discourse around education, equity, and access. This change, however, seems slow, and even with published works such as those found in *Alaska Education: Views from Within*, or policies encouraging school boards to adopt cultural standards, test results for Alaska Native students have not changed for the better.

Critical Race Theory

Epistemology is the study of the acquisition of knowledge, yet in the context of White privilege and academic research, Critical Race Theory (CRT) emerges as a reminder that research focused on a single ethnic group, such as this study, will observe oppressive practices or seek to intervene racial injustice. Leonardo (2013) attests, "Research on race can assist in this political project by challenging the claim that Western-based epistemologies produce objective knowledge about a particular phenomenon when it rules out particular experiences and people from official knowledge production" (p. 601). Alaska Natives are the authority in their lands, on

the environment and seasons, yet not in their schools. If this ideology is further expanded into academia and scholarly research, it is imperative that the truth be told; Leonardo (2013) further explains, "The history of social research has been violent to marginalized peoples, such as indigenous groups, who are represented by perspectives that are neither kind to their cultural worldview nor accurate regarding their priorities (p. 603). As research seeks to examine these low performing schools, statistical data validates facts and evidence that schools serving minority students have become victims to the stories that have surrounded their lives (Leonardo, 2013). This deficit model has ensured the systemic failure of schools that serve minorities. Leonardo (2013) states, "As a subset of the racialized social system, the racial educational apparatus is struggling to resolve its contradictions. There are signs of progress and evidence for success stories of this or that school in this or that city, but the overall story of education for minority children in the USA appears to remain constant. The achievement gap is not being bridged" (p. 609).

Brayboy (2005) writes, "CRT in education posits that racism is endemic in society and in education, and that racism has become so deeply engrained in society's and schooling's consciousness that it is often invisible. CRT confronts and challenges traditional views of education in regard to issues of meritocracy, claims of color-blind objectivity, and equal opportunity" (p. 428). Delgado, Stefancic, and Liendo (2012) describe micro aggressions that people of color or other races may experience throughout their lifetime as "…small acts of racism, consciously or unconsciously perpetrated, welling up from the assumptions about racial matters most of us absorb from the cultural heritage in which we come of age in the United States. These assumptions, in turn, continue to inform our public civic institutions— government, schools, churches— and our private, personal, and corporate lives" (p. 2). Through

the deconstruction of critical race theory, it can be assumed that agents of oppression are masked within systems hidden behind processes, practices and policies in places like school and state educational agencies. "Many critical race scholars recognize that poverty and race intersect in complex ways, so that the predicament of very poor minority families differs in degree from that of their white counterparts. Delgado, Stefancic, and Liendo (2012) also have concluded that, "White poverty usually lasts for only a generation or two (even for white immigrant families); not so for the black or brown variety— it is apt to last forever" (p.123). For Alaska Native students these correlations suggest little has changed over the years, and according to the State of Alaska Department of Education, Alaska Native students consistently perform well below the state average and perform lower than any other ethnic group reported in every content area. Through the lens of Critical Race Theory, scholars and researchers alike can begin to deconstruct the oppressive role schools play in preserving poverty for people of color.

Chapter 3 Methodology

Introduction to Methodology

The problem of teacher turnover and low student achievement in Alaskan schools is likely a multifaceted problem. Factors that could contribute to the high turnover rates include cost of living, limited housing, challenging teaching assignments and isolation. A more controversial factor includes the culture of life in rural Alaska, and clash of an imposed Western education system in the context of an Indigenous culture (R. Barnhardt & Kawagley, 2010). Alaska Native students are also taught more frequently by first year teachers throughout their schooling (Adams, 2010). In an attempt to identify what qualities may or may not influence teacher turnover and student achievement, this study aims to identify *positive deviance* schools in Alaska; that is schools, which have generally higher rates of student achievement than other schools despite having the same characteristics as schools, which report lower academic scores. From these positive deviance schools, variables which potentially contribute to this improved performance can be identified. This assumes that positive deviance can be predicted and replicated at schools across Alaska if certain factors, elements, and ideologies are present. This methodology utilizes quantitative analysis.

This quantitative portion of study will consist of three phases. The first phase will be to identify positive deviance schools which would presumably experience higher rates of teacher retention based on the literature, and simultaneously higher rates of student achievement. The second phase will be to identify through graphical exploration and regression-based modeling variables which contribute to a school being identified as positive deviance. The final phase of

the study will attempt to use the model developed in the second phase to predict positive deviance schools using a subset of the data that was not used for model development.

This chapter presents a discussion on the following aspects of the study: (a) research design and appropriateness of the research design, (b) the data and subjects that will be used for this study, (c) the procedure for data collection, (d) the variables, (e) the data analysis, and finally (f) design and ethical considerations.

Description of the Study

Non-experimental research is research that lacks manipulation of the independent variables by the researcher; therefore, the researcher studies what occurs naturally or has already occurred and discusses how variables are related. Despite its limitations for studying cause and effect, non-experimental research is very important in educational settings and in some ways, practically unavoidable. In this study, schools in Alaska and the students they serve, come as they are, and some of the variables of this analysis are impossible to manipulate, such as geographic location, demographics, or school size. Furthermore, in educational research, experimental research can be difficult to put into practice in educational settings, and can present ethical issues when there is an attempt to implement randomized control and treatment groups (Muijs, 2004). Thus, a non-experimental design is the most appropriate design for this study.

The data used in this study are observational data available to the general public through online databases and public entities such as the University of Alaska Institute for Social and Economic Research, and Alaska Department of Education and Early Development. Thus, the design of study has no treatment or level of control group. To test the validity of the data, statistical methods will use statistical modeling to predict if schools could become positive

deviance schools. Due to the limitations of available observational data (driven by geographical separation and cost) to identify cause and effect in the field, a subset of the data will be set aside during model development to be used later as a test dataset to assess predictive abilities. If predictive abilities are high, the validity of the relationships discovered during data analysis is improved.

Subjects and Sample Size

The study sought to use a data set of 484 schools, including urban schools, boarding schools, alternative schools, and charter schools. The final data set, after accounting for missing data or inclusive data, left the study with a total of 477 schools. The data will examine elementary schools, high schools, middle schools, and K-12 schools. The primary variable for the data set used to determine the outcome variable is the average over a 5-year period from 2009 to 2014 of combined Student-Based Assessment test scores for Alaska (SBA) for three subjects: Reading, Mathematics, and Writing. Five years allows the study to account for anomalies that might exist from one year to the next year to give a more accurate reflection of the consistency of achievement, or lack of achievement in some schools. For example, a school's SBA scores may fluctuate based on the enrollment of students in a certain grade level from one year to the next. This average also creates a more stable and reliable data set used to examine student achievement in Alaska schools at various levels, given the assessment during this period was unchanged.

Procedure for Collecting the Data

All of the data collected for this study are available to the public and published by the Alaska Department of Education and Early Development. In this case, the researcher enlisted the assistance of the Institute of Social and Economic Research at the University of Alaska Anchorage to gain access to the SBA data with support from the University of Alaska Statewide Mentor Project researcher. For this study, the SBA data form the dependent variable. The University of Alaska has a memorandum of understanding that allows for data sharing between the Alaska Department of Education and Early Development and the University of Alaska Anchorage Institute of Social and Economic Research.

Additional data were collected using maps published by organizations such as the Alaska Department of Labor, the Alaska Department of Education and Early Development, and the Alaska Native Language Center at the University of Alaska Fairbanks. All of these resources provide additional information to identify cultural group and regions relevant to Alaska Native culture and history. These data sets help identify school district boundaries, access resources and connections to hubs, boroughs as well as the degree of isolation (defined by the distance a school may be from large metropolitan areas such as Anchorage, Fairbanks, and Juneau). Additionally, data from maps help provide a framework to understand access to economic diversity, defined as having access to a multitude of industries, employment opportunities, and continuing education or job training opportunities.

Variables

Dependent Variable: Whether or not a school is a positive deviance school will be measured as a binary variable. This variable will be developed during data analysis using

academic achievement of each school as measured by the 5-year average score of the school in three subjects: Reading, Mathematics and Writing. This is a continuous variable measured between 0 and 100. The SBA test was administered to students in third grade through tenth grade. For each of the subject areas assessed the Department of Education and Early Development (DEED) for Alaska rates schools based on a percentage in four tiers: (a.) Percent Advanced, (b.) Percent Proficient, (c.) Percent Below Proficient and (d.) Percent Far Below Proficient.

Independent Variable 1: School District, a categorical variable with 54 levels based on the DEED list of schools and school districts.

Independent Variable 2: District Region, a categorical variable with five levels commonly used by the Department of Labor: Interior, South Central, Southeast, Southwest and Far North.

Independent Variable 3: Located in a Hub, defined as a location where Alaska Airlines lands large planes, a binary variable.

Independent Variable 4: Presence of an Alaska Partner air carrier, a binary variable.

Independent Variable 5: Access by road, a binary variable.

Independent Variable 6: Access by ferry, a binary variable.

Independent Variable 7: Rural Score, measured categorically between zero and four based on Variables 3, 4, 5, and 6.

Independent Variable 8: Alaska Native group region based on maps published by the Alaska Native Language Cultural center.

Independent Variable 9: Average Attendance Rate, measured as a percentage and reported to DEED by school district officials.

Independent Variable 10: Average Enrollment, measured as a continuous variable as the average number of students enrolled each year during the 5-year study.

Independent Variable 11: Average Dropout Rate, measured as a percentage.

Independent Variable 12: Average percentage of Alaska Native students enrolled.

Independent Variable 13: Average Title I score 0 to 5 as measured by the number of times in 5 years a school received federal designation of having 75% or more students eligible for free- or reduced-price lunch.

Data Analysis

First, summary statistics were generated for the dependent and independent variables using means and standard deviations for continuous variables and counts and frequencies for categorical variables. Next, data analysis was undertaken in three phases.

The first phase identified positive deviance schools for the average scores on SBA assessments across 5 years for each of the three subjects. First, correlation between the scores were explored. If the score was highly correlated ($R^2 > 0.8$), the score was averaged to generate one overall average score for the school. If the scores were not highly correlated, Principal Component Analysis was used to develop one single variable representing school achievement, which is a linear combination of the three subject scores (Crawley, 2012). This distribution of the average or the first principal component was explored using a histogram. A suitable cutoff point was determined from the data to classify a school as either positive deviance or not.

The second phase was graphical analysis of whether or not a school is identified as positive deviance and the independent variables to identify four or five promising variables for modeling. Graphical analysis involved examining boxplots or frequency tables. Then, a subset

of 25% of the total dataset was set aside (119 schools) and the remaining 75% was used for model development.

A binary logistic regression was used to model positive deviance status against the variables selected during graphical exploration. Backwards model selection was guided by AIC (Bozdogan, 1987) and BIC (Burnham & Anderson, 2004) to arrive at a suitable model. Relationships between variables and positive deviance were then quantified using odds ratios and significance of these variables determined using Wald tests (Crawley, 2012).

Finally, in phase three, the predictive abilities of the model developed in phase two were tested using the subset of the data not used for model development. Specificity and sensitivity were quantified and used to assess the predictive abilities of the binary logistic regression model, hence helping to validate the relationships identified as part of phase two and helping to ensure the broader applicability of the findings.

Design and Ethical Considerations

It was assumed that the data collected during data collection are reliable and valid. As this is an observation, non-experimental study, the researcher is unable to manipulate independent variables and thus statistical control takes the place of experimental control.

Finally, as observational research has limited ability to identify causal relationships, a phase testing the predictive abilities of the model developed during data analysis is included to test the broader applicability of the findings of this study.

Protecting the identity of human subjects is ensured by only collecting school level data; hence, no individual is identified during data analysis.

Summary

The purpose of this study is to identify positive deviance schools in Alaska and to then identify what other variables are related to positive deviance and more significantly, if they can successfully predict positive deviance using a sample of 477 schools in Alaska. The analysis was split into three phases: the first identified positive deviance schools for average grades across 5 years, the second modeled relationships between positive deviance and other variables, and the final phase attempted to predict positive deviance using the developed model.

The results of this analysis are presented in Chapter Four.

Chapter 4 Results

Introduction of Results

The purpose of this chapter is to present the findings of the quantitative analysis to determine what a positive deviance school is, and what factors can successfully predict positive deviance in Alaskan schools. The chapter is split into three sections: first, summary statistics of the data are presented, next a definition for positive deviance schools in this dataset is calculated using school marks, and finally a model is built and tested to predict positive deviance.

Data Preparation

All data preparation was undertaken in Microsoft Excel while analysis utilized Statistical Package for the Social Science (SPSS). Information on a total of 477 schools was collected for this analysis out of a total data set of 484 schools. The outcome variable of school SBA scores, that would be used to identify positive deviance schools, was the percentage of students that scored as "Advanced Proficiency" in reading, mathematics and writing. All other variables were collected as described in the methodology. The independent variables of school district (54 levels) and Alaska Native group region (29 levels) were also included in the analysis as the range for the number of schools in a particular region or school district provide further analysis on how regional and single site districts perform academically. These variables were also nested within the variable of school district, and their removal provided for a more accurate review of how well, or not a single school performed academically as measured by the SBA data.

Summary Statistics

Data analysis and summary statistics were generated using IBM SPSS Version 23. Summary statistics of categorical variables are presented in Table 1. Schools are roughly evenly located within each of the five district categories. Nearly two-thirds (61.2%) of schools had access to an Alaskan Airlines Hub, and 38.8% of schools have access to an Alaskan Airlines Partner. Almost half (49.1%) of schools have access by road and less than a quarter (22.2%) of schools have access by ferry. Sixty-four percent (64.4%) of schools had a Title I score of five (5). Several levels of both Title I status and Rural Score had only a small number of schools in them. These were grouped together for future data analysis so that a Rural Score now had three levels: 0 (n = 127), 1 (n = 159), and 2 or greater (n = 191); and Title I status now had three levels: 0 (n = 101), 1 through 4 (n = 69) and 5 (n = 307).

Table 1.

Summary Statistics of Categorical Variables

Variable	Level	Count (N)	Frequency (%)
District	Far North	43	9.0
	Interior	85	17.8
	South Central	189	39.6
	Southeast	64	13.4
	Southwest	96	20.1
Hub Status	No	292	61.2
	Yes	185	38.8
AK Airlines Partner Status	No	443	92.9
	Yes	34	7.1
Road Access	No	239	50.1
	Yes	238	49.9
Rural Score	0	127	26.6
	1	159	33.3
	2	172	36.1
	3	16	3.4
	4	3	0.6
Ferry Access	No	371	77.8
	Yes	106	22.2

Table 1. *Continued*

Variable	Level	Count (*N*)	Frequency (%)
Title I Status	0	101	21.2
	1	13	2.7
	2	18	3.8
	3	15	3.1
	4	23	4.8
	5	307	64.4

Summary statistics of continuous variables are presented in Table 2. Average number of students enrolled in a school was 270 (*SD* = 328.43). Average attendance rate was 92% and average dropout rates were 6%. The average percentage of students in a school who identify as Alaska Native was 54%. The average percentage of students with advanced proficiency in reading and mathematics is 29% and 27% respectively. The average percentage of students with advanced proficiency in writing was 17%. Only 333 schools had information on dropout rates, therefore this variable was removed from further analysis.

Table 2.

Summary Statistics of Continuous Variables

Variable	*N*	Mean	*SD*
Attendance rate	477	0.92	0.04
Average enrollment	477	270.08	328.43
Dropout rate	333	0.06	0.09
Average Alaska Native percentage	428	0.54	0.60
Reading Advanced Proficiency percentage	477	0.29	0.18
Writing Advanced Proficiency percentage	477	0.17	0.16
Mathematics Advanced Proficiency percentage	477	0.27	0.17

Determining Positive Deviance

Positive deviance schools were identified using the percentage of students classified as *advanced proficiency* in reading, writing and mathematics. First, correlation between the three variables was explored. Pearson correlation coefficients and significance are presented in Table

3. All three variables were significantly correlated with one another with Pearson correlation coefficients greater than 0.75. Therefore, the decision was made to average the advanced proficiency percentages for each subject to calculate an overall percentage of students for the school who were considered of *advanced proficiency*. Overall, advanced proficiency percentages for schools had a mean of 0.24 with a standard deviation of 0.16.

Table 3.

Correlations between Reading, Writing and Mathematics Advanced Proficiency Percentages

		Reading	Writing	Mathematics
Reading	Pearson correlation	1	-	-
	significance	-	-	-
Writing	Pearson correlation	0.771	1	-
	significance	< 0.001	-	-
Mathematics	Pearson correlation	0.872	0.878	1
	significance	< 0.001	< 0.001	-

A histogram of advanced proficiency scores for schools is presented in Figure 1. Most schools appear to have an advanced proficiency rating of less than 0.4 (40% of students or less are consider of advanced proficiency status). For proficiencies greater than 40%, there appears to be a somewhat sharp drop off in the number of schools. Therefore, it was decided that a school having an advanced proficiency percentage of greater than 40% would make that school a positive deviance school. This resulted in 87 schools being identified as positive deviance schools (18% of all 477 schools).

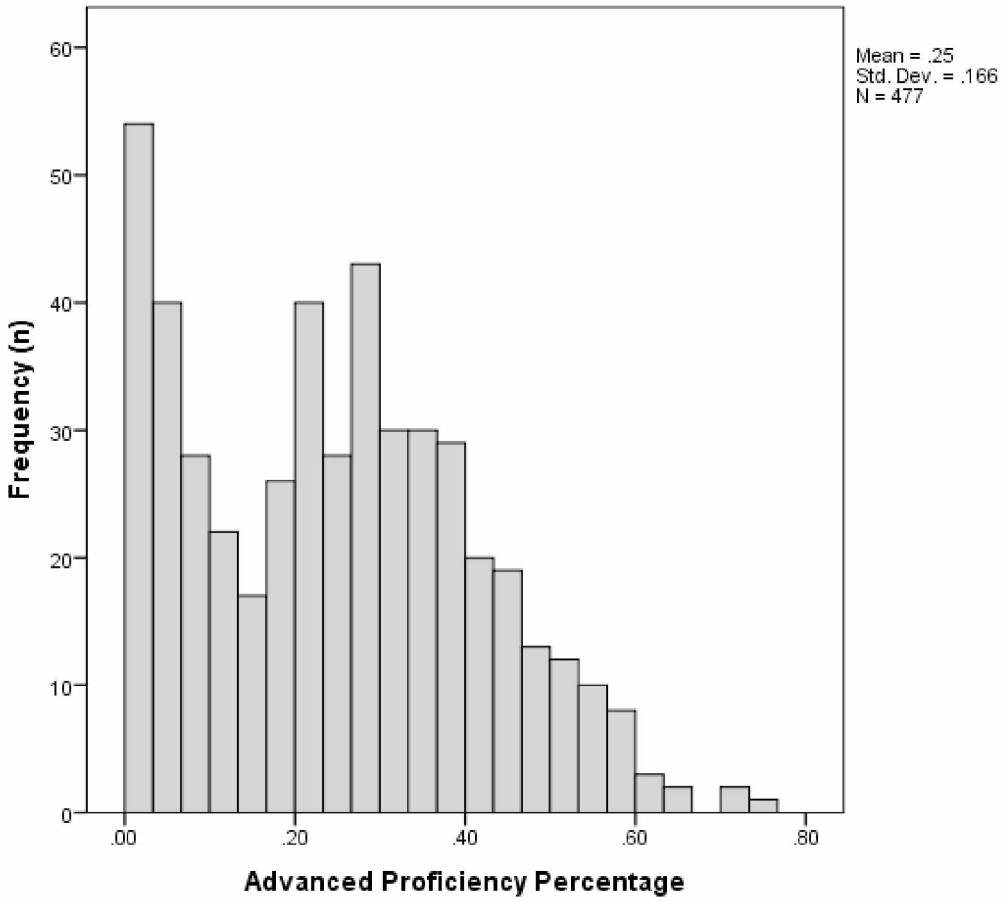

Figure 1. Histogram of advanced proficiency percentages for schools

Model Generation

Summary statistics of categorical variables by positive deviance status are presented in Table 4. There is larger percentage of positive deviance schools from South Central than there is not positive deviance schools (66% for positive deviance vs 33%), and a smaller percentage from South West (5% for positive deviance vs 23%). A larger percentage of positive deviance schools are also located near hubs (55% for positive deviance vs 35%), Alaskan Airline partner airports (12% for positive deviance vs 5%), and have road access (74% for positive deviance vs 44%) and ferry access (32% for positive deviance vs 20%). A much larger percentage of positive deviance schools have a rural score of 2 or greater (64% for positive deviance vs 34%) and a

much larger percentage of positive deviance schools have had no years where they qualified for Title I status (49% for positive deviance vs 15%). Based on these observations, all categorical variables should be included in the model selection process.

Table 4.

Summary Statistics of Categorical Variables by Positive Deviance Status.

Variable	Level	Not Positive Deviance (*N*)	Not Positive Deviance (%)	Positive Deviance (*N*)	Positive Deviance (%)
District	Far North	42	0.11	1	0.01
	Interior	75	0.19	10	0.11
	South Central	131	0.33	58	0.66
	Southeast	51	0.13	13	0.15
	Southwest	91	0.23	5	0.05
	TOTAL	390	1.00	87	1.00
Hub Status	No	253	0.64	39	0.44
	Yes	137	0.35	48	0.55
	TOTAL	390	1.00	87	1.00
Alaskan Airlines Partner Status	No	367	0.94	76	0.87
	Yes	23	0.05	11	0.12
	TOTAL	390	1.00	87	1.00
Road Access	No	217	0.55	22	0.25
	Yes	173	0.44	65	0.74
	TOTAL	390	1.00	87	1.00
Rural Score	0	126	0.32	1	0.01
	1	129	0.33	30	0.34
	2 or greater	135	0.34	56	0.64
	TOTAL	390	1.00	87	1.00
Ferry Access	No	312	0.80	59	0.67
	Yes	78	0.20	28	0.32
	TOTAL	390	1.00	87	1.00
Title I Status	0	58	0.15	43	0.49
	1 to 4	54	0.14	15	0.17
	5	278	0.71	29	0.33
	TOTAL	390	1.00	87	1.00

Summary statistics of continuous variables by positive deviance status are presented in Table 5. There appears to be a slightly higher attendance rate at positive deviance schools (93% in positive deviance vs 91%), but there appears to be no difference in the number of students

enrolled. The percentage of Alaska Native students also appears to be higher in positive deviance schools (61% in positive deviance vs 47%). Based on these observations, attendance rate and percentage of Alaska Native students appear to be suitable variables for inclusion in the model.

Table 5.

Summary Statistics of Continuous Variables by Positive Deviance Status

Variable	Positive Deviance Status	*N*	Mean	Standard Deviation
Attendance rate (%)	No	390	0.91	0.05
	Yes	87	0.93	0.02
Average enrollment	No	390	272.11	367.72
	Yes	87	291.83	168.23
Alaska Native (%)	No	353	0.47	0.57
	Yes	75	0.61	0.70
Advanced Proficiency (%)	No	390	0.19	0.12
	Yes	87	0.49	0.06

Finally, positive deviance status by school district level is presented in Table 6. Most notable, two school districts have 100% of their schools as positive deviance status: Skagway School District and Unalaska City School District. Thirty-three school districts do not have any positive deviance schools.

Table 6.

Positive Deviance Status by School District

School District	Not Positive Deviance Schools (*N*)	Positive Deviance Schools (*N*)	% Positive Deviance	Total
Alaska Gateway	8	0	0	8
Aleutian Region	2	0	0	2
Aleutian East Borough	5	0	0	5
Anchorage	64	29	31	93
Annette Island	3	0	0	3
Bering Strait	15	0	0	15
Bristol Bay Borough	2	0	0	2
Chatham	2	1	33	3
Chugach	4	0	0	4
Copper River	4	1	20	5
Cordova City	2	0	0	2
Craig City	4	0	0	4
Delta-Greely	4	1	20	5
Denali Borough	3	1	25	4
Dillingham City	2	0	0	2
Fairbanks North Star Borough	27	8	22	35
Galena City	4	0	0	4
Haines Borough	2	1	33	3
Hoonah City	2	0	0	2
Hydaburg City	1	0	0	1
Iditarod Area	8	0	0	8
Juneau Borough	12	2	14	14
Kake City	1	0	0	1
Kashunamiut	1	0	0	1
Kenai Peninsula Borough	25	16	39	41
Ketchikan Gateway Borough	7	2	22	9
Klawock City	1	0	0	1
Kodiak Island Borough	12	2	14	14
Kuspuk	9	0	0	9
Lake and Peninsula Borough	11	1	8	12
Lower Kuskokwim	28	0	0	28
Lower Yukon	10	0	0	10
Matanuska-Susitna	30	11	26	41
Mount Edgecumbe	1	0	0	1
Nenana City	1	0	0	1
Nome Public Schools	4	1	20	5
North Slope Borough	11	0	0	11
Northwest Arctic Borough	12	0	0	12
Pelican City	1	0	0	1

Table 6. *Continued*

School District	Not Positive Deviance Schools (*N*)	Positive Deviance Schools (*N*)	% Positive Deviance	Total
Petersburg Borough	1	2	66	3
Pribilof	2	0	0	2
Saint Mary's	1	0	0	1
Sitka	4	1	20	5
Skagway	0	1	100	1
Southeast Island	6	1	14	7
Southwest Region	7	0	0	7
Tanana City	1	0	0	1
Unalaska City	0	2	100	2
Valdez City	2	1	33	3
Wrangell Public	1	2	66	3
Yakutat	1	0	0	1
Yukon Flats	6	0	0	6
Yukon-Koyukuk	10	0	0	10
Yupiit	3	0	0	3

For the process of model building, approximately 25% of the data was first set aside to use as a test dataset. This was done by using a random number generator to assign each school included in the analysis a value between 1 and 40. Schools that had a number assigned greater than 30 were set aside, which resulted in 138 schools being set aside for testing (28.9% of the dataset). The rest was used for model building.

Model building was undertaken using a binary logistic generalized linear model and backwards model selection using AIC and BIC. The model selection process is documented in Table 7. The variables for district, hub status, Alaskan Airlines partner status, road access, ferry access, rural score, Title I status, attendance rates and percentage of Alaska Native students were used as the full model. No interactions were considered. At each stage, the least significant variable was removed and the change in AIC and BIC was assessed to determine if removal of the least significant variable improved model fit.

Table 7.

Model Selection Process – Final model highlighted in Bold.

Model Iteration	Description	AIC	BIC
1	District + Hub + Alaskan Partner + Road + Ferry + Rural + Title I + Attendance + Native Students	238.49	294.34
2	District + Alaskan Partner + Road + Ferry + Rural + Title I + Attendance + Native Students	236.49	288.62
3	District + Road + Ferry + Rural + Title I + Attendance + Native Students	235.75	282.91
4	District + Road + Ferry + Rural + Title I + Attendance	232.65	277.33
5	**District + Ferry + Rural + Title I + Attendance**	**232.30**	**272.36**
6	District + Ferry + Title I + Attendance	236.71	270.23

The final model has the following formula:

$Di \sim$ Bernoulli (Yi)

$Log(Yi/1\text{-}Yi)=\beta 1 + \beta 2fi + \beta 3ai + \beta 4d1i + \beta 5d2i + \beta 6d3i + \beta 7d4i + \beta 8r1i + \beta 9r2i + \beta 10t1i + \beta 11t2i + \varepsilon i$

Where Di is the positive deviance status of the school, fi is 1 when there is ferry access for school i, zero otherwise; ai is the attendance rate of school I; $d1i$ through $d4i$ are the dummy variables for the district status where $d1i$ is 1 if the district is Far North, $d2i$ is 1 if the district is Interior, $d3i$ is 1 if the district is South Central, and $d4i$ is 1 if the district is Southeast; $r1i$ through $r2i$ are the rural status dummy variables, where $r1i$ is 1 if the rural status is 0, $r2i$ is 1 if the rural status is 1; $t1i$ and $t2i$ are the Title I status dummy variable where $t1i$ is 1 if the Title I status is 0, $t2i$ is 1 if the Title I status is 1 through 4; and εi is the error term.

Model Parameters and significance are presented in Table 8. Access by Ferry and Title I status both had a significant relationship with positive deviance status. Having access by ferry increased positive deviance likelihood by 2.819 times compared to not having ferry access.

Having no years where the school had Title I status (Title I = 0) compared to having 5 years of Title I status increased the likelihood of the school being a positive deviance school by 3.749 times. Having between 1 and 4 years of Title I status increased the likelihood by 2.159 times. All other variables did not have a significant relationship with positive deviance status, but their removal resulted in decreased model fit and prediction accuracy.

Table 8.

Model Parameters and Significance Estimates.

Variable	Beta	S.E.	Wald	df	Sig.	Exp(B)
Ferry (*β2*)	1.036	0.470	4.866	1	0.027*	2.819
Attendance Rate (*β3*)	9.752	5.249	3.452	1	0.063	17184
District			8.724	4	0.068	
District - Far North (*β4*)	0.349	1.341	0.068	1	0.794	1.418
District – Interior (*β5*)	0.146	0.845	0.030	1	0.863	1.157
District – South Central (*β6*)	1.042	0.688	2.294	1	0.130	2.835
District – Southeast (*β7*)	-0.262	0.748	0.122	1	0.726	0.770
Rural Score			2.151	2	0.341	
Rural - 0 (*β8*)	-18.69	4266.10	0.00	1	0.997	0.000
Rural – 1 (*β9*)	-0.512	0.349	2.151	1	0.143	0.599
Title I			13.115	2	0.001*	
Title I - 0 (*β10*)	1.321	0.366	13.017	1	0.000*	3.749
Title I – 1 to 4 (*β11*)	0.770	0.459	2.808	1	0.094	2.159
Constant (*β1*)	-11.582	5.030	5.302	1	0.021*	0.000

Note: Significance at the $p = 0.05$ level indicated with *

The classification table for the model on the data used to develop the model is presented in Table 9. The model successfully predicted 83.8% of schools *deviance* outcome, and could successfully identify 27.9% of the positive deviance schools. Only 4.0% of non-positive deviance schools were incorrectly identified as positive deviance. This is a sensitivity of 27.9% and a specificity of 96.0%.

Table 9.

Classification Table of the Final Model.

Observed	Predicted		% Correct
	Not Positive Deviance	Positive Deviance	
Not Positive Deviance	267	11	96.0
Positive Deviance	44	17	27.9
Overall Percentage Correct			83.8

Model Testing

The model was tested by inputting the variables for each school into the model equation using Microsoft Excel and examining the model's ability to correctly predict positive deviance schools from the dataset not used in its production. The classification table of the test dataset is presented in Table 10. The model was able to correctly predict 81.8% of the data, including 11.5% of the positive deviance schools in the test dataset. This is a sensitivity of 11.5% and a specificity of 98.2%.

Table 10.

Classification Table of the Test Dataset

Observed	Predicted		
	Not Positive Deviance	Positive Deviance	% Correct
Not Positive Deviance	110	2	98.2
Positive Deviance	23	3	11.5
Overall percentage correct			81.8

Conclusions

Positive deviance status was determined in this analysis as schools which had an average "advanced proficiency" percentage across reading, writing and mathematics as greater than 40%.

Less than 20% of schools examined in this analysis met this requirement to be assigned the status of a positive deviance school.

The most significant variables in predicting positive deviance status were being Title I status and attendance rates. Schools with higher attendance rates or which did not qualify for Title I status generally had higher average percentage of "advanced proficiency" students – resulting in these schools being more likely to be identified as positive deviance schools. Access by ferry, district and rural status were also important in predicting positive deviance status, although their relationship with positive deviance status was not significant. Overall, the model developed in this analysis could only successfully predict positive deviance status in 11.5% of schools it was tested on that were not used to develop the model. Given, that in this dataset 18.8% of schools were positive deviance schools, this is worse odds than guessing positive deviance status based on its prevalence. It is likely that positive deviance and student achievement are better predicted by variables not considered in this analysis, although the significant relationship with attendance rates and Title I status may hint towards the variables which are important in determining student achievement in Alaskan schools.

Chapter 5 Conclusion

Summary of the Study

Indigenous authors and those working closely with Indigenous people to study education and schooling in Alaska often make distinctions about the differences between Western values and Native or Indigenous values (R. Barnhardt & Kawagley, 2010; Hartman, 2015; Kawagley, 1995; Napoleon, 1996). Values and what beliefs groups of people hold are foundational to a cultural group's worldview; for example, rituals, traditions, and customs that are sacred are typically passed down to future generations through education. This process of transformation of knowledge is how groups of people form their identities. Values held by specific cultural group also shape what is prioritized as important or even significant for the collective group to persist and sustain; these priorities drive the behaviors and actions that define how a group of people chooses to live and act in the context of their environment. This is the essence of how the concept of a *worldview* works in practice. As with all Indigenous cultures, it is common knowledge the environment and their connectedness to the land are unprecedented in comparison to how European and Western civilizations view the environment. This is just one example of many areas of conflict that exits between these two worldviews. Indigenous worldviews hold more value in spiritual beliefs, whereas a Western worldview is more complimentary towards scientific knowledge: connectedness versus individualized accomplishments; land is sacred versus the land is used as a resource; time is cyclical and seasonal for Indigenous people, in comparison, time is linear and progressive in Western cultures.

These conflicting cultural values are what put groups of people at odds with one another. Eventually one culture will dominate another and work tirelessly to destroy the other, mostly by

undermining their values. Historically, Western culture would resort to acts of violent genocide, yet as these atrocities became unpopular, a more subdued approach became necessary. Over the course of history, the two primary institutions used to oppress Native American people were religious establishments and schools. Those in positions of authority worked actively to force Native Americans to assimilate. Efforts to prevent Native Americans from speaking their native languages in schools to forcing them onto reservations or preventing them from practicing their traditions of dance and ceremony all but desecrated Native American cultures in the Western hemisphere. Even before the Doctrine of Discovery (Hartman, 2015), Indigenous peoples' ways of life have been threatened by Western values. While the perception of racial tolerance, increased political correctness, education and assimilation over a century have increased understanding of dissonance in an educational setting, conflicting cultural values still create micro aggressions that exist today. Today, scholars study the subtleties of oppression and the effect of micro aggressions on the oppressed. They use their work to help shape a story and develop new theories about how the past mistakes can better inform our future progress. Yet the power and control still rests, and perhaps forever will, with the dominant culture. Even though educators with a scholarly understanding of oppression have sought to generate more equitable systems with the aspirations to better serve Native American children's education, these efforts have not succeeded in aggregate. This study sought out to determine if any schools existed in rural Alaska that were capable of demonstrating higher than average academic achievement rates as measured by SBA data.

Chapter 1 of this study explores the many facets that contribute to the complexity of education and schooling in the state of Alaska, with a special focus on rural Alaska and Alaska Native people. Specific problems around teacher retention, geographical isolation, curricular and

critical race theory provide the framework to help readers better understand the conflicting cultural values that affect and influence education in the last frontier. This chapter also discussed the conceptual framework that draws on systems theory to introduce how Western systems continue to serve as agents of oppression that foster racism even today. The term positive deviance is introduced in Chapter 1 as both a term used to describe school achievement anomalies and as a measurement tool to set a baseline for designation of high performing schools.

Chapter 2 provides a historical narrative of the history of education in Alaska. Using a critical race theory lens, Chapter 2 highlights Alaska's history starting with the Russian invasion. Words like *invasion* are intentionally used to replace words like *influence* to more accurately describe the events and experiences that occurred during this terrifying era of war. Influence does not begin to communicate the violent genocide, systematic racism and discrimination, and exploitation of the Alaska Native land and resources. Chapter 2 also provides a review of teacher supply and demand literature that corresponds with the dates the data were collected on the Alaska Student Based Assessments. Also in this chapter, definitions are elaborated on using peer-reviewed literature to help operationalize the concept of positive deviance. As a result of the findings a section was added on critical race theory to introduce a possible explanation as to why it is so challenging to identify high performing schools in rural Alaska.

Chapter 3 outlines the research design and methodology identifying the data set and variables used to run a regression analysis. It further addresses the assumptions and limitations of the study with an emphasis on the challenges associated with doing experimental design research in educational settings.

Chapter 4 is an expression of the findings, results of the methodology and analysis of the modeling. Chapter 5 includes the summary and interpretation of the findings as well as the purpose of the study; limitations of the study; implications for practice and relevant instruction; future studies and the conclusion. Recommendations are specifically for Alaska Native people with an emphasis on rural Alaska.

Summary of the Findings

The study did establish that statistical analysis is an effective way to classify a school as either Positive Deviant or not. Eighty-seven schools from the study were identified as being positive deviance based on a cut score of 40% of the students achieving Advanced Proficiency status. Of the 87 schools, 21 showed promise, 66 were removed from the dataset because they were part of one of the four largest urban school districts. That left 21 schools in the positive deviance dataset, and of those, over half of the schools had a Title I score of 5, meaning they consistently served students eligible for free and reduced lunch. Half of the 21 schools were located in Southeast Alaska; the study found having access by ferry increased positive deviance likelihood by 2.819 times compared to not having ferry access. When accounting for all schools in Alaska, not having a Title I designation increased the likelihood of the school being a positive deviance school by 3.749 times.

Fifty-seven of the 87 positive deviance schools enrolled elementary students, and of the 57, 35 offered pre-school programs as part of their elementary school. While this study did not examine the effects of early learning, experts agree early childhood education plays a critical role in giving children a better academic foundation in the future. Physical activity may also play a role in student achievement, recess, for example, and physical education are also important to a

child's ability to learn and develop, yet traditional junior high and high school programs do not provide such breaks for extracurricular activities embedded throughout the school day.

One school did stand out in the study. It scored a zero on access, making it a rural school, it scored a 5 for Title I, meaning all 5 years the school was eligible for free and reduced lunch, and the school is located in a region that may have higher rates of Alaska Native students in attendance. However, after further review of the school, it only tested on average 13.4 students a year, and of those tested, the number of Alaska Native students made up less than half of the population.

In terms of using predictive models, the study concluded, it is likely that positive deviance and student achievement are better predicted by variables not considered in this analysis, although the significant relationship with attendance rates and Title I status may hint towards the variables which are important in determining student achievement in Alaskan schools.

Interpretation of the Findings

This study expected to identify a diminutive number of rural Alaska schools that experience higher rates of success as measured by higher rates of student achievement in vulnerable populations, namely Alaska Native students residing in rural Alaska. Sadly, the results of the study did not yield any schools in the Central Yup'ik regions, nor were there any schools in the Inupiaq region that had higher than average achievement rates. Athabascan and Gwich'in communities were not represented in the 87 schools designated as positive deviance. While Nome as an outlier did have one school, the Anvil City Science Academy, this is a charter

school and no reportable data were available on their enrollment to determine the number of Alaska Native students that attended.

Using the Alaska Native Populations at the time of Contact with Europeans Map as a backdrop, one will quickly notice that as Western influence and populations increased, students living in those regions had higher student achievement gains. This makes sense given the majority of students attending school and who are living in rural Alaska are Alaska Native. Larger concentrations of White students attend schools in urban areas.

Of the 87 positive deviance schools identified in this study, none are located in regions serving Inupiaq, Athabascan including Deg Hitan or Holikachuk, Gwich'in, or Yupiit. Additionally, the data revealed schools with the earliest contact with Europeans (Sandberg, 2013) outperformed schools located off the road system, even when Title I status is high. Perhaps the harsher the environment, the farther away a school is from resources, services and goods, the less likely students are to perform as well as their peers located in the coastal regions of Alaska because of the higher rate of teacher turnover, as mentioned in the literature (Adams, 2010; Hirshberg et al., 2014).

The findings did indicate that schools in Southeast Alaska on the Ferry system increased the likelihood of a school achieving positive deviance status, as did schools that scored a zero on Title I status. A couple inferences can be made: Most of the schools located in the Southeast region are single school sites that serve fewer than three or four schools, not including Juneau or Ketchikan. Most of the school districts are also serving schools located in the same community, making board members, superintendents, principals, in-service trainings, and overall, all community involvement more feasible. Likewise, each of these single sites has its own superintendent. It is also common knowledge that school districts in Southeast Alaska have few

vacancies each year, ensuring the students in these schools are taught by teachers with more experience. The Map of Alaska School Districts demonstrates the high concentration of school districts that are located within Southeast Alaska, and how that number decreases, forcing large school districts to serve, in some cases, over 25 schools in various villages that span hundreds of miles. One thought, for future study, is to examine the locus of control and the impact on schools in rural Alaska. While it is difficult to do experimental research design work in education on a large scale, schools, for example, located in the Lower Kuskokwim School District are supporting 21 villages, yet their Board of Directors is only comprised of nine members.

Limitations

Because this study used a very specific methodology to determine if schools existed in rural Alaska that were achieving greater academic gains, the standard for achievement was set very high. As a result, no schools surfaced that met that high standard in rural and remote villages, making it impossible to truly examine variables that might contribute most to academic success. Although some data revealed information about school size and leadership, other designations that might contribute to positive deviance schools were difficult to identify, making it also impossible to consider replication of positive deviance schools across Alaska.

Implications for Practice and Relevant Instruction

This study was prepared to incorporate a case study of a high performing school in rural Alaska, yet the data did not yield such results. Nevertheless, in areas where Alaska Native people are exercising their authority in rural areas to develop new programs, initiatives, and

practices that recognize their cultural values within the framework of the school, one can see the beginnings of transformational changes in the community-school relationship. One study, Two Cultures, One School (R. Barnhardt, 1990) explores the power of local control in the community of St. Mary's. Like most communities in rural Alaska, education and school was the responsibility of the Catholic Mission. Barnhardt (1990) reports, "The people of St. Mary's were reluctant, however, to turn the schooling of their children over to the Bureau of Indian Affairs or State-Operated School System, so in 1969, they incorporated as a "city" and formed the St. Mary's City School District, whereby they would be able to operate their own educational system to meet the particular social, cultural and economic needs of their community. St. Mary's was one of the first villages of its size in the state to exercise the option of incorporation as a city to gain control of their school" (p. 2). Today, the community of St. Mary's still operates under this model of local control. However, even with the local control, the system of school has not changed: "With the arrival of the early explorers, traders, missionaries, and teachers, a collision of worldviews occurred, including the introduction of competing ways of learning, thus disrupting the balance in the traditional system. Gradually, a new form of education was introduced in the form of 'schooling,' operating on the assumption that the introduction of Western ways through Western institutions would transform Native people into citizens of the 'modern' world" (R. Barnhardt & Kawagley, 2004, p. 1).

Even with everything Westerners have done to prevent Indigenous people from being true to themselves, and even with the introduction of new religions and modern technologies that have been adopted by Native people, along with the current educational structures designed to force assimilation, Indigenous people have persisted to preserve their history, traditions, knowledge, way of life, and subsequently, their identity. In rural Alaska, Alaska Native groups

still practice their traditional dance, dress in traditional clothing and out of necessity for survival still hunt and gather their food from the land. These customs reaffirm the values that have survived decades of oppressive and involuntarily assimilation efforts and can now be seen inside the walls of a school.

Perhaps because so many of the teachers are originally not from the community, and the turnover is so frequent, establishing connections to the community can be difficult, requiring a constant re-start of teacher induction programs. One such program working to change the relationship between a community and school is the Alaska Rural System Initiative. "AKRSI seeks to promote a relationship such that the two systems join to form a more comprehensive holistic system that can better serve all students—not just Alaska Natives—while at the same time preserving the integrity of the individual systems" (R. Barnhardt & Kawagley, 2004, p. 61). However, perhaps preservation of this integrity is precisely the reason schools that have embraced new models, ones that foster stronger connections between the school and the community, still have not been able to translate that systemic integrity into higher academic gains on standardized test scores. Although AKRSI sparked the cultural revitalization movement.

Yet, the St. Mary's case study does provide hope for the future of education in Rural Alaska. Under local control, the St. Mary's school board has been able to categorically state, "The people of St. Mary's seek to have the school recognize and treat their culture as a living culture, rather than as an artifact of the past. Being Yup'ik is not just a matter of carrying on Yup'ik tradition, but encompasses practices and beliefs that have been borrowed and adapted from other sources to make Yup'ik culture what it is today" (R. Barnhardt, 1990). Going beyond words on a wall, however, and putting these affirmations into action requires a fair amount of

commitment and understanding of local culture. What is happening is this shift from simply talking about culture or including it into mission statements and really embedding culture into the curriculum and school activities. VanDoren (2010) states, "Compulsory education constantly reminds Native students that we have not progressed that far from Indian Boarding schools" (p.112). This study argues the system of education, as it exists now, is by design set up to continue this model of oppression by using assimilation as the tool, and this practice is intentional. Schools that serve Native American children can embed culture in their curriculum; incorporate relevant instruction or place based educational programs and bring Elders into their schools; embrace language immersion programs; and even hire more Native American educators, yet the results of these efforts have yet to yield a single school that could be identified as a Positive Deviant school. However, we can choose to change the model, change the measurement standards, change the organizational structures, relinquish control and power, and rewrite policies that embrace sovereignty. These are all viable options to consider and postulate if it is important to see all children succeed, and more importantly, provide opportunity to those who have traditionally been marginalized by the very system intended to help them.

Perhaps the lack of results will inspire educational leaders to examine school improvement through a lens of critical race theory, as well as take into account and consider how historical events, oppression, and emancipation might serve as a means to transform schools and the communities they serve. Perhaps the leaders of educational systems would better serve Alaska Native people by allowing them to develop their own systems of measurement and accountability grounded in their own worldviews, experiences, and cultural values. The study very clearly indicates our current education system is failing Alaska Native children, and that should be intolerable. The systematic approach to schooling however, that is using the same

model of education that was designed to oppress a population of people, will continue to produce the same results. We must ask the tough question, what is the purpose of schooling? History proves both education and religion were the primary agents designed to defeat the Indigenous people of Alaska.

Much of the literature from Native Alaskan authors bring to light that the values of their culture are not validated in school culture or curriculum. While small changes have occurred, the existing school system is very much controlled and dominated by Western influences (R. Barnhardt, 2010; McDowell Group, 2001; Holton et al., 2011; Kawagley, 1995). As Barnhardt (2010) has noted, "The values of the Western educational system of speaking, reading, and writing in the English language and studying Western history, concepts, and ideas conflict with the values, beliefs, and traditions of Alaska Natives. For generations, it was more important for our people to gather and harvest subsistence foods than it was to learn how to read and write English" (p. 5). Values are foundational to any cultural group; they guide and protect traditions; values help a group establish identity. When one's values are not recognized or are non-existent in institutions, such as education institutions, we must acknowledge that as a form of oppression.

Future Studies

For this study, it would be feasible to identify the higher or highest performing schools by cultural group and examine what they are doing in a case study model. Grounded in ethnography and participatory research, a study of this nature is feasible.

Elementary schools perform better on academic assessment than do traditional high schools as this study indicates. Failing schools (as measured by Western standards) should have the opportunity to experiment with new models of education, and be afforded time to refine those

models and evaluate their effectiveness. It is possible there are characteristics and behaviors that may help elementary schools perform better, such as longer class time, teachers and students being assigned to a single teacher for the entire year, and subjects being taught not in blocks, but as integrated concepts. The integration of physical activity may play a more important role in fostering higher rates of student achievement and brain stimulation.

Studies that examine and reveal racial bias can foster self-awareness in individuals who hold positions of power and authority. Often these traits are not overt; no one admits to being racially biased; however, learning about it as a participant or through study can help educators, and leaders develop a lens that modifies their worldview. At some point, however, future studies will not be enough, and Alaska Native people will have to continue the struggle for cultural preservation, but perhaps not within the confines of the education system.

Conclusion

The function of educating children is dominated by Western culture and influence. In the far corners of Alaska exist tiny villages where people traverse a continuum; on one end of the spectrum, people practice traditional dance, speak their native language, understand the meaning behind their customs, and dress in traditional clothing. Their rituals of living in harmony with the land have withstood plagues, starvation, systematic extinction, indoctrination, and oppression. On the other side of the spectrum exists modern day conveniences, transportation via motorized vehicles, direct television and internet streaming, oil heating systems, and permanent structures that have confined traditionally nomadic people to a fixed central location. In the middle of these villages, rests a school. Inside these square walls, non-native teachers and principals, often from the Lower 48, relocate temporarily for short-term employment, adventure,

new experiences, and challenges. These well-intended educators are seldom prepared for the transition to living and teaching in what might feel like a foreign country. The weather is the least of their difficulties. Life in rural Alaska as a newcomer comes with such opportunities and challenges, that some educators are simply not as successful as others are at navigating the new landscape. According to a study by the Institute of Social and Economic Research at the University of Alaska Anchorage (Hirshberg, A. Hill, & Kasemodel, 2013), teacher turnover rates between 2002 to 2014 are twice as high as those in urban school districts: "Annual teacher turnover rates vary hugely among rural districts, ranging from a low of 7% to over 52%, while urban districts have turnover rates that are generally lower and more similar, from about 8% to just over 10%" (p. 1). More significant than turnover, however, is the Alaska Teacher Turnover, Supply, and Demand study which highlights that 90% of the teachers in Alaska are White (A. Hill & Hirshberg, 2005). Yet in rural Alaska, 90% of the students are Alaska Native (Alaska State, 2014).

This trend of non-Native educators, trained outside of Alaska, assuming positions of authority in schools over Alaska Native students is the same construct that was used to decimate Alaska Native languages, culture, and traditions. While valiant efforts by many school districts to integrate relevant instruction or cross cultural curriculum, as well as language immersion programs, into the system, it does not change the fact the school system is controlled by the dominant culture. Even as state and school boards hire their own superintendents; participate in the hiring of teachers; and take actions, like adopting Alaska Cultural Standards & Guidelines, this system of educating children is designed and controlled by Westerners. It is relatively easy to adopt a policy; however, implementing it can be a challenge if the fundamental system by which children are educated remains the same. What is the purpose of education for Alaska

Natives now compared to the 1900s? During that era, education served as an agent to indoctrinate Indigenous people into Western ways; this study questions whether that concept has fundamentally changed. The settlers or invaders were not secretive either about their process, and evidence of this exists in literature. Given the results of this study did not yield any shining star that had just gone unnoticed in the aggregate data, and given that the study validates what many Alaskans already know in terms of how poorly Alaska Native children do on Western assessments, the responsible recommendation would be to propose Alaska Native people be allowed to define and create their own systems of education that align with their cultural values.

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